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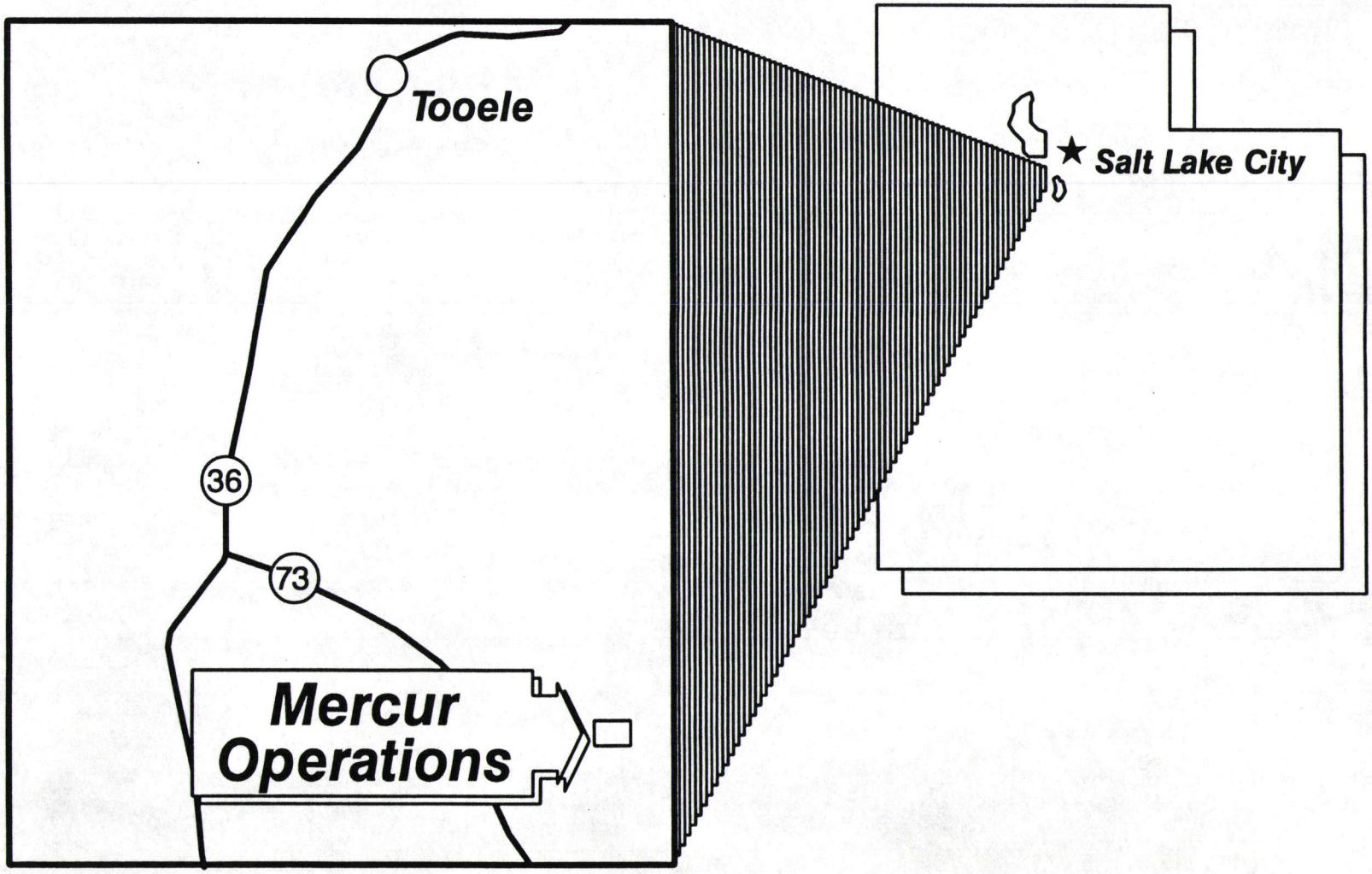
BARRICK RESOURCES (USA), INC.
MERCUR MINE CLOSURE PLAN
REGULATORY AGENCY BRIEFING
FEBRUARY 11, 1997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EXECUTIVE SUMMARY

The closure plan for the Barrick Resources (USA), Inc. - Mercur Mine identifies the various forthcoming reclamation and associated closure tasks that lie ahead during the next eight years. This plan includes schedules for reclamation while meeting regulatory, engineering and environmental requirements for the project. These requirements are also consistent with the objectives of the Barrick Gold Corporation Environmental Policy adopted by the Board of Directors April 1995.

There are certain Federal, State and local regulatory agencies that will oversee aspects of the mine closure. The Utah Division of Oil, Gas and Mining; the Utah Division of Water Quality and Tooele County are the agencies anticipated to be most involved in establishing facility closure requirements for the three most complex closure components: mine waste rock disposal areas, the valley fill leach facilities and the tailing impoundment.

Most of the operating regulatory permits will require modification, involving regulatory agency involvement in the closure planning and execution. Specific environmental monitoring and reporting will be ongoing throughout the closure process.

The proposed closure schedule is primarily driven by the rate of decant solution removal from the tailing impoundment. Solution will be decanted primarily by passive and forced evaporation. The tailing surface needs to be dry and stabilized to support construction equipment activities.

1.0 Plan Objective

The immediate objective of the Mercur Mine Closure Plan is to identify the necessary reclamation and associated closure tasks that are required for the shutdown of the Mercur Mine. The Plan will provide the managerial framework for orderly closure, meet the requirements of governmental entities, regulatory agencies, and achieve the post-closure land use of wildlife habitat. The Plan will also provide for the responsibilities of Barrick Resources (USA), Inc. to its employees and the general public.

2.0 Plan Background

2.1 Strategy

The strategy is to develop and implement a responsible, cost-effective and timely closure plan. The various reclamation/closure tasks must be defined and analyzed in a timely manner, obtaining regulatory approval prior to cessation of mine and mill operations.

2.2 Planning Phases

To ensure that the project proceeds in an orderly and timely manner, the planning function of the project has been ongoing for some time. This approach has provided a framework for maintaining direction.
Items completed to date include: identifying closure requirements; identifying possible problem areas; suggesting possible options to solve or eliminate problems; and establishing the initial cost estimate for closure.

3.0 Project Schedule

The reclamation schedule is dependent upon date of termination of mining and milling activities. While some reclamation work can be accomplished concurrently with mining and milling activity, the major reclamation tasks will be done when mining/process operations cease. Table 1 lists a summary schedule of mining, milling and reclamation activities. Detailed schedules are found in Appendices C1-C6.

3.1 Mine Production

Production from ore mining activities will terminate in March 1997 with completion of mining of the final phase of the Golden Gate Pit.

3.2 Mill Production

With the completion of mining operations, the mill, commencing in roughly April 1997, will operate at 5800 tpd with the hot leach and reprocessing of historic tailing. Valley Fill Leach #3 is currently

scheduled to end production in December 1997. Mill operations are anticipated to end in the fourth quarter of 1998.

3.3 Reclamation Activities

Reclaiming of inactive mine waste rock disposal areas and haulage roads is being accomplished concurrently with mine operations. Reclamation of the remaining mine waste rock disposal areas and haulage roads will be completed after the conclusion of mine operations. Valley Fill Leach #3 is scheduled to begin the neutralization process in 1998 with bulk fill and closure activities starting in 1999. Valley Fill Leach #3 reclamation should be completed by 2000.

The crusher, mill processing facilities, shop, warehouse, laboratory and office facilities will remain in an operational condition at termination of milling activities. In the event the facilities have not been disposed of by 2001, they will be dismantled and shipped to a commercial storage facility.

Reclamation on the tailing impoundment will begin with the dewatering program when mill operations are terminated. Actual tails covering and earthwork activities will be dependent on the rate at which the tails dewater and the tails surface becomes sufficiently stable to permit reclamation activity. Past experience suggests that tailings cover could be placed over approximately 30% of the tails surface in 1999.

All reclamation efforts should be completed by December 2002 with the exception of minor site work and ongoing environmental monitoring.

4.0 Reclamation

The reclamation of the disturbance at the Mercur Mine generally consists of 5 primary components. These components are:

Mine disturbance	@ 680 acres
Milling disturbance	@ 77 acres
Heap Leaching	@ 52 acres
Tailing Impoundment	@ 147 acres
General Disturbance	@ 88 acres

4.1 Mine Facilities

Inactive mined lands have been concurrently reclaimed since 1987. Principal areas include inactive rock disposal areas and valley fill leach areas.

4.1.1 Waste Rock Disposal Areas

Waste rock disposal areas will be reclaimed using mine production equipment. The process begins with reshaping the material, followed by topsoil placement and creation of erosion control structures, and ends with revegetation. Reshaping the area is necessary to guarantee the long-term stability of the disposal sites and for visual impacts. All areas will be reshaped to the approximate surface profile of the surrounding areas. Experience, along with equipment limitations,

indicates the maximum workable slope of these areas is no steeper than 2H: 1V. Due to the steepness of the surrounding terrain, no slope will be generally shallower than 3H:1V. Following reshaping, the rock disposal areas will be covered with a nominal 1-foot of topsoil. Past practice has indicated this thickness sufficiently establishes growth while avoiding waste of this resource. Run-off diversion structures will be incorporated for erosion control. These will be spaced to prevent rilling. Finally, the site will be reseeded with an appropriate seed mixture to re-establish vegetation.

4.1.2 Open Pits

The open pits, with the exception of the Sacramento Pit, Golden Gate Pit and Rover Pit, will be backfilled to the furthest extent possible. In-pit waste rock will be reshaped. The backfilled areas and level areas
surrounding the Golden Gate pit will be covered with a nominal foot of topsoil and reseeded. No reclamation of pit highwalls will take place. The overall slope of the highwalls will be left at a 1H:1V slope. Water is not expected to accumulate in any pit.

4.1.3 Haulage Roads and Access Roads

All mine haulage roads will be reclaimed. The roads will be contoured to fit the natural slope, covered with a nominal 1-foot of topsoil, and reseeded with an appropriate seed mixture. Public access roads, which existed prior to open pit mining, will remain in place as public corridors. Those are Silverado Canyon Road, Ophir Canyon Road, Mercur Canyon Road, Manning Canyon Road and Sunshine Canyon Road (see Figure 1).

4.1.4 Explosive Storage

Powder magazines, ANFO silos, and other associated facilities will be offered for sale as viable equipment or salvage. All areas utilized for explosive storage will be reshaped and reclaimed similarly to other generally disturbed areas.

4.1.5 Drainage, Regrading and Contouring

The mine site facilities will be intended to blend with the natural landscape. The site will be covered with a nominal 1-foot of topsoil and the area seeded with the appropriate seed mixture.

4.2 Valley Fill Leach Facilities

The evaluation of sound closure technology indicates that valley fill leach facilities should be covered after completing a prescribed cyanide neutralization program. The closure of valley fill leach facilities at Mercur is described below.

1. Valley Fill Leach #1 - Valley Fill Leach #1 has been rinsed with both direct precipitation and applied potable water to achieve an acceptable rinsate quality; capped with native clay; covered with subsoil; partially covered with topsoil; and partially seeded. The area is currently being used to stockpile historic mill tailing, which will be re-processed through 1998. After the historic tailing has been removed, additional topsoil and seeding will be required to close this

facility pursuant to the existing final UDWQ closure plan. Monitoring of this facility for rinsate water quality and reclamation success will continue until otherwise approved by the UDWQ.

2. Valley Fill Leach #2 - Valley Fill Leach #2 has been intermittently rinsed with applied potable water, natural precipitation, and ferric sulfate solution; covered with 3-feet of subsoil; one foot of topsoil; and seeded. Drain-down and leach collection solutions are monitored for solution quality and flow, then compared against predictive infiltration, mixing, and transport models to determine the effectiveness of the covering design. Monitoring for these parameters and reclamation success will continue until otherwise approved by the UDWQ.
3. Valley Fill Leach #3 - This facility is currently in production. The proposed reclamation design is similar to that proposed for Valley Fill Leach #2v. Valley Fill Leach #3 is being loaded so that the exposed face has a slope of 3H:1V instead of the angle of repose as was the case at Valley Fill Leach #2. This should simplify the installation of the final cover. The gold recovery plant will remain operational to assist in the heap rinse neutralization program. Tentative plans include recirculation of barren process solutions without cyanide fortification and inoculation with native bacteria. This biodetoxification will be supplemented with natural precipitation. The VF3 facilities will be dismantled-mantled when the mill facilities are sold or removed. Monitoring of this facility will continue for solution quality and reclamation success as negotiated in the closure plan component of the applicable groundwater quality discharge permit.

4.3 Mill Facilities

4.3.1 Plant and Processing Facilities

All plant and process facilities will remain on a standby basis such that the facilities can be sold as a complete, intact package. At the time of such sale, process equipment will be removed from the site, the walls and roof disassembled, concrete foundations broken, dozed to ground level, and covered. Process underground piping will remain underground after appropriate rinsing and plugging procedures are employed. This plan assumes the plant will be sold in the years 2000 or 2001. Should the plant facilities not be sold, they will be dismantled, stored or auctioned at some time beyond 2001.

4.3.2 Facility Decommissioning

All facilities will be cleaned prior to dismantling. Cleaning may include washing / rinsing of structures and equipment. In the case of remaining laboratory reagents and chemicals, these materials will be offered to science departments of local public schools. Those chemicals not accepted for this use and cleaning residues would be shipped offsite for disposal. Remaining chemicals and process reagents will be consumed prior to mill shutdown or returned to the supplier.

4.3.3 Drainage, Regrading and Contouring

The mill site will be contoured to blend with the natural environment. The site will be covered with a nominal 12" of topsoil and the area seeded with the appropriate seed mixture.

4.4 Tailing Impoundment

4.4.1 Dewatering

Tailing impoundment dewatering will be accomplished with forced evaporation. A study comparing evaporation methods (Ref. 95-03, JBR, Feb. 1995) predicts a significant annual net decrease of stored impoundment water by operating a forced evaporation system over the deposited tailing beach. Forced evaporation appears to be the most effective means of eliminating free solution within the impoundment.

A composite-lined water storage facility has been constructed in the impoundment East Bay during the 1996 construction season. This cell will provide a means for controlling impoundment freeboard while tailing deposition and beach development proceed along the eastern shore of the impoundment. Decreasing the volume of stored water on the tailing surface, while developing a tailing beach along the eastern shoreline, will provide sufficient beach area for simultaneous deposition of tailing while operating the forced evaporation system. This facility is an integral part of the plan for dewatering the impoundment.

The forced evaporation system consists of two barge-mounted vertical pumps delivering water from the East Bay water storage facility to sprinklers located on the developed tails beach. Water from the sprinklers sheet across the beach, collecting at the impoundment low point. A barge mounted vertical pump returns this water to the East Bay storage facility. The sheeting action of water across the tails surface substantially increases the evaporative water loss over using sprinklers alone. Two complete sets of sprinklers will be maintained in order to alternate sprinkling sites. Water will be distributed around the impoundment in the tailing pipelines not in use for tailing deposition.

The forced evaporation dewatering system, used in conjunction with the East Bay storage facility, should result in a substantial reduction in the volume of free water on the tailing surface by 1999. Placement of the tailing cover could begin in 1999 providing the tailing surface is stable enough to support earth-moving equipment.

4.4.2. Water Treatment

There are four possible sources of impoundment water that may continue to flow after the tailing impoundment has been covered and reclaimed. These sources are:

a. Main Dam Chimney Drain
b. Main Dam Seepage Collection Cistern
c. Levee Seepage Collection
d. Saddle Dam Chimney Drain

These four impoundment seepage sources, and separate Valley Fill Leach #2 and Valley Fill Leach #3 Leakage Collection Systems may continue to flow for some period of time after closure and reclamation. All of these sources currently seep small quantities of water varying from less than 1 GPM to over 30 GPM. As long as the East Bay Water Storage cell is functional, seepage water collected from the sources will be pumped to the East Bay and disposed of through the forced

evaporation process. Water that continues seeping from these sources after placement of the tailing cover and closure of the East Bay Storage facility will require some type of treatment prior to disposal.

A preliminary investigation of water treatment and a more detailed follow-up study identified, evaluated and ranked the following eleven (11) treatment alternatives:

1. Anaerobic Contact Cell
2. Enhanced Evaporation
3. Reinfiltration Gallery
4. Thiopak Sulfate Reduction/Sulfide Precipitation
5. Reverse Osmosis
6. Selective Ion Exchange
7. Membrane Crystallizer
8. Electrodialysis
9. Vapor Compression Brine Concentrator With and Without Evaporator and Spray Dryer
10. Rhizofiltration
11. Aerobic Wetlands

Reverse Osmosis, Ion Exchange, Membrane Crystallizer, Electrodialysis, Vapor Compression and Rhizofiltration technologies concentrate the chemical constituents of the seepage water in some type of collection medium and/or residue that may require offsite disposal. Three of the alternatives, the Anaerobic Contact Cell, the Thiopak Sulfate Reduction, and the Aerobic Wetlands, are anticipated to chemically alter some metals, forming insoluble compounds that presumably will not require offsite disposal.

The Anaerobic Contact Cell is a passive treatment facility that simulates a naturally occurring subsurface flow anaerobic wetland in a controlled structure. Anaerobic wetlands remove some heavy metals because of their propensity to generate precipitating metal sulfides.

In the Anaerobic Contact Cells, seepage water, introduced into the bottom of the cell, moves upward through a 4-foot to 5-foot bed of substrate (composted cow manure) and exits the cell through an effluent collection system into a drain field. The primary reaction for selective metal removal is sulfate reduction. Sulfate reduction reactions remove certain metals from the seepage by forming insoluble metal sulfides. The bacteria in the substrate reduce sulfate under anaerobic (oxygen deficient) conditions, utilizing simple carbon as the main energy source. The resulting metal sulfides are insoluble and remain in place on site.

A passive Anaerobic Contact Cell treatment facility is currently being evaluated to treat post-reclamation seepage from both the tailing impoundment and valley fill leach area 2 and 3. On-site pilot testing in 1996 and 1997 should confirm the suitability of this technology for treating post-closure seepage at Mercur and establish final design parameters and operating constraints. The treatment facility would be located on a three-acre site, at the base of the main tailing dam. Seepage from the impoundment and valley fill leach sources will be delivered to the treatment facility by gravity through pipelines. The facility will consist of two cells containing sulfate-reducing

bacterial containing substrate. Based on post-reclamation seepage quantity and quality estimates, this technology should provide adequate long-term levels of metal concentration reduction.

The main dam and levee seepage collection aprons will be filled with rock and covered. The covered aprons will function as French drains at both the main dam and levee buttress, collecting seepage from the base of the buttresses after covering is complete. The collector sumps and pumping systems will be decommissioned and bypassed. Seepage will flow by gravity through a pipeline to the treatment facility.

4.4.3 Impoundment Cover

The surface of the deposited tailing will be approximately 98 acres at the time of closure. The tailing surface will be contoured and covered with a 3-foot cover. This cover will consist of 2 feet of ungraded fill, covered by a 1-foot layer of topsoil. The surface, contoured to ensure drainage, will be re-vegetated with native plants and grasses. The area will be evaluated for measures to restrict post-closure access.

HELP model analysis of 38 different cover scenarios indicates that the selected 3-foot cover is the most effective way to: (1) isolate the stored tailing; (2) limit the amount of moisture that infiltrates the deposited tailing; and (3) provide a growth medium that is capable of supporting permanent native vegetation; thus greatly reducing the potential for cover erosion.

The final design is based on HELP model analyses that assume all run-off moisture is diverted around the impoundment and that only moisture that falls directly on the reclaimed surface has potential to infiltrate the deposited tailing.

The 3-foot cover (2-foot ungraded sub-base covered with 1-foot of topsoil) was selected over other alternatives because of the following:

1. Synthetic caps are not permanent and inhibit the re-establishment of all but shallow-rooted plants.
2. Clay caps do not demonstrate substantially superior performance; they are extremely difficult to properly install over an uncompacted base; and they lose performance advantage when penetrated by the roots of re-established vegetation.
3. Gravel drains placed over clay to prevent root penetration increase moisture infiltration into the tailing due to the low one- percent (1%) surface gradient. The gravel drains also establish a barrier to deep-rooted plants.
4. Increasing the thickness of the two-foot sub-base does not significantly reduce the amount of moisture that infiltrates the tailing.

The surface of the tailing impoundment will be contoured to direct surface drainage toward a spillway located at the north end of the impoundment. Run-off will be diverted around the impoundment and will not contribute to moisture infiltration or potential cover erosion. The impoundment surface contours are designed to prevent ponding of water on the reclaimed surface. A low section in the buttress on the east end of the impoundment will provide an alternate overflow path in the occurrence of an extraordinary precipitation event.

The impoundment surface contour will be established by carefully controlling tailing deposition around the perimeter of the impoundment during the remaining years of milling operation. Construction of the water storage cell in 1996 provides a means for controlling freeboard, while allowing the establishment of tailing deposition schedules that focus on developing final tailing surface contours. The use of heavy earth-moving equipment to establish the final surface contour should be minimal.

Approximately 290,000 cubic yards of earthen material are needed to provide the 2-foot cover of ungraded fill in the tailing cap. About 80,000 cubic yards of material will come from the spillway excavation on the north end of the impoundment. The remaining material will come from the mining operations. At the close of mining activity, the Mine Department will haul and store in the quarry enough suitable fill to complete covering the tailing. Topsoil for the final 1-foot of the tailing cover will come from the adjacent topsoil pile south of the impoundment.

4.4.4 Buttress Covers

The downstream face of both the levee and main dam buttresses has 2H:1V slopes. These slopes will not be contoured nor in any way disturbed except for the placement of the cover. The upstream slopes of the buttresses will be contoured and shaped from the buttress crest to the top of the final tailing surface prior to placement of the 3-foot cover. The upstream slopes will have a maximum slope of 3:1 (see Figure 6).

The exposed surfaces of the buttresses will be covered with a minimum 3-foot cover. The cover will consist of 2-feet of ungraded fill covered by 1-foot of topsoil. The surfaces will be re-vegetated with native plants and grasses. The downstream face of the Main Dam has a well-established vegetative cover. There are no plans to disturb or supplement this vegetation.

The crest elevations of the buttresses will be a minimum of 5-feet above the tails surface, except for a section of buttress on the east side of the impoundment that will be lowered to within 2-feet of the tailing surface. This lowered section of buttress will provide an alternate overflow path in the unlikely occurrence of an extraordinary precipitation event.

There will not be a permanent roadway on the crest of the buttress. Access to the spillway and operational groundwater monitoring wells will be provided via the perimeter drainage diversion ditches.

4.4.5 Contouring, Topsoil and Seeding

The disturbed area surrounding the site will be contoured to blend with the adjacent natural terrain. The site will be covered with a nominal 1-foot of topsoil and the area seeded with the appropriate seed mixture.

4.4.6 Spillway and Breach

The Utah Division of Dam Safety requires that all abandoned dams have a breach and/or open spillway installed to prevent unintentional impounding of water behind the abandoned structure. A

spillway/breach will be constructed at the northeast end of the impoundment through the Meadow Canyon Pass.

This spillway is designed to provide drainage for a 100 year, 24-hour storm event without ponding water in the reclaimed structure. Surface run-off from the reclaimed impoundment will be discharged through the spillway.

Excavation of the spillway conveyance will generate approximately 80,000 cubic yards of earthen material that will be used in the tailing impoundment cover.

4.4.7 Diversion Ditches and Perimeter Roads

A series of drainage diversion ditches will be constructed around the north and east perimeter of the impoundment. This diversion ditch system is intended to capture and direct precipitation runoff from the drainage basins above the tailing impoundment (Figure 7), bypassing the revegetated tailing impoundment. This diversion of drainage basin run-off will reduce the possibility of erosion damage to the tailing cover and limit moisture infiltration into the deposited tailing.

The diversion ditches are also engineered to handle water flows generated by the 100 year, 24-hour storm event. Run-off from the drainage basins is collected in two ditch systems. The north ditch diverts a part of the drainage into the downstream portion of the impoundment spillway, emptying into Meadow Canyon. The south ditch diverts other run-off along the north side of Valley Fill Leach #2 into Mercur Canyon. Run-off from all drainage basins is returned to the original natural drainage in Mercur Canyon.

The ditches are designed with a minimum 15-ft. bottom width. The ditch bottom could also serve as roadway, providing access to operational groundwater monitor wells.

4.4.8 Instrumentation and Equipment

Instrumentation sites in the main dam and levee buttresses will be operational for a period of five years after mill closure. Measurements will be made monthly as long as water is applied to the impounded tailing surface. Measurement intervals will be lengthened to quarterly upon cessation of water applications to the impoundment. All vibrating wire and standpipe measurements will be suspended five years after cessation of mill operations, provided quarterly measurements indicate pore pressures within the structure are decreasing at predictable rates. Buttress reclamation activities will be conducted in such a manner as to avoid damage to instrumentation sites in the buttresses. Instrumentation sites will be closed upon completion of measurement requirements.

4.5 Site

4.5.1 Administration Building

The administration building will be the last facility to be removed. It will be used to store personnel, regulatory and operational records and serve as the closure management facility. Records required to be stored indefinitely will be stored offsite after decommissioning of the administration building.

4.5.2 Shop and Office Facilities

The mine shop / office complex include mine engineering and environmental offices, mine operation offices, and exploration and geology offices on the upper floor. The mill maintenance offices, mill maintenance shop, the warehouse facility, the mine maintenance shop, and mine maintenance offices comprise the bottom floor. This complex will be disassembled and offered for sale. Concrete foundations will be broken, dozed to ground level, and covered. All site storage tankage will be removed and offered for sale. Permanent documents and records will be stored in the administration building.

4.5.3 Visitors Center

It is anticipated the existing visitor's center will be relocated and deeded to the City of Ophir, Utah.

4.5.4 Historic and Cultural Sites

No significant cultural or historical remnants are known to exist within the Mercur disturbance boundary. Historical relics such as the Golden Gate Mill foundation, lime kiln, general store foundation wall, and other miscellaneous items will be protected to the greatest extent practicable without compromising the overall reclamation design. The Mercur Childrens Cemetery located at the mouth of Mercur Canyon will be refurbished with the assistance of local charitable groups and landowners. The Mercur area will be evaluated for adoption into the Utah Mining Historical Education Program to further public mining education public through tourism.

4.5.5 Surface Hazards

No historic abandoned mined land workings will remain within the Mercur disturbance boundary at closure. The lands owned by Barrick along the west slope of the Oquirrh Mountains in Rush Valley between the mouths of Mercur Canyon and Ophir Canyon will be evaluated for abandoned mined land restoration. Discussions with the UDOGM have been initiated and a comprehensive inventory of all surface hazards is underway.

4.5.6 Utilities

Electric

Mercur Mine power is supplied via a 46 KV overhead transmission line. When the need for electrical power ceases, the main Mercur substation will be deactivated and removed. Other overhead power lines within the Mercur permitted area will be decommissioned and recovered by Barrick. It is currently believed that Utah Power & Light will be responsible for recovering the 46 KV power poles, wire, and associated components and retaining the 46 KV right-of-way. Discussions with Utah Power and Light will confirm this scenario.

Pumping - Deep Wells

Fresh water is secured from three (3) deep wells in Rush Valley. At closure, the pumps, pump houses and electrical gear will be removed or sold and the wells capped. The fresh water pipelines that are buried will remain below ground pending regulatory agency approval. The Booster Pump Station is located near the entrance to Mercur Canyon. At mine closure, the building, pumps, and

electrical switchgear will be removed. The underground water lines are anticipated to remain below ground after capping.

Propane
The propane tanks will be drained and sold. The concrete tank supports will then be dozed to ground level.

Industrial Solid Waste Landfill
The industrial waste landfill area will be contoured to provide positive drainage. The area will be covered, topsoiled and seeded at closure. Other waste generated during remaining administrative activities will be transported to the Tooele County landfill if approved.

Sewage Treatment
The present sewage plant will be terminated upon mill closure. During closure activities, an interim disposal system will be operated.

4.5.7 Safety Fencing / Berming

Fencing and limited berming will be used to isolate from the public certain revegetated areas and mine highwalls. A 7-foot combination wire fence will be used to fence off all areas. This will require an estimated 24,000 feet of fence. Berming, in conjunction with fencing, will be used on all flat areas to limit vehicle access to areas otherwise accessible.

4.5.8 Access Roads

All roadways, except Silverado, Ophir, Mercur, Manning and Sunshine Canyon Roads, will be reclaimed. The remaining two access corridors are shown in Figure 1. The Silverado, Ophir and Sunshine Canyon Roads will be left as unimproved roads. The Manning Canyon and Mercur Canyon Roads will be configured to meet applicable State or County road design specifications.

4.5.9 Surface Hydrology and Erosion Control

All disturbed areas will be regraded to reestablish pre-existing surface drainage systems into Rush and Cedar Valleys. All process and mine development structures and excavations located in ephemeral drainages will either be removed or isolated. A surface hydrology study has been completed and is the basis for the preliminary designs of drainage channels to divert surface and storm water run-off around the tailing impoundment, valley fill leach areas #1, #2 and #3 and the Golden Gate Pit.

Additionally, secondary channels will be constructed within the disturbed area to collect run-off, minimize erosion and route run-off to the main channels. These other channels will be designed to complement the overall site drainage.

4.5.10 Topsoil and Revegetation

The regraded and reshaped areas will be covered with a nominal 1-foot topsoil cover. Barrick has stockpiled approximately 1.2 million cubic yards of topsoil, which will be sufficient to cover all

proposed reclamation areas. The topsoil will be hauled from one of the 17 stockpiles and placed near each reclamation site. The topsoil cover will be placed using a dozer or grader, with survey control to ensure proper coverage. Following placement, the topsoil may be scarified to a depth of 6-inches. Scarification will be in a direction perpendicular to the slope angle to reduce erosion channeling.

Following topsoil placement, each site will be seeded using a blend of approximately 12 native species and grasses, forbs, and shrubs. The seed mixture will be applied at a nominal rate of thirty pounds per acre on all sites. Seed will be applied in one of four methods: drill seeding (flat surfaces only), spread and harrow (slopes up to 2:1), hand spreader broadcasting (any surface), or hydraulic application (any surface). Following seed placement, mulch and fertilizer will be applied in application rates of 0 to 2000 pounds per acre for mulch, and 0 to 200 pounds per acre for fertilizer. The mulch will consist of wood fiber, pelletized alfalfa, alfalfa compost, mushroom compost, or other equivalent hydraulically applied mulch. The fertilizer will be 16-16-8 starter fertilizer for all applications. Tackifiers may be utilized where wind and water erosion or steep slopes require mulch binding.

4.5.11 Soil Remediation

Following the closure of the facilities at Mercur, site areas will be tested for hydrocarbons using soil-boring equipment. The extent of the contamination will be identified through State of Utah certified environmental laboratory analyses. It is currently planned that any identified petroleum contaminated soils will be excavated, loaded into haulage trucks, and transported to a designated onsite bioremediation cell. This cell will be pre-approved by the Utah Division of Environmental Quality, Division of Environmental Response and Remediation (DERR) The bioremediation cell will be large enough to accommodate all identified contaminated soils. The soils will be loaded on the cell in a single 18-inch to 24-inch layer. The cell will be aerated monthly using a tractor and PTO driven tiller. Fertilizer will be added prior to each aeration to increase petroleum breakdown. The fertilizer will be a nitrogen/phosphorous/potash blend as required by the level of contamination in the soils, and applied at a rate required by the amount of contamination present. This blend and application rate will be adjusted as required by the level of contaminate in the soils.

Soil samples from the cell will be tested to determine the TPH levels. Following successful remediation of the soils to TPH levels below the DERR standards, the soil will be removed and utilized as topsoil, or reclaimed in place by seeding, fertilizing and mulching.

5.0 Environmental Regulatory Planning

Environmental regulatory considerations will play a preeminent role in the closure of the Mercur Mine. Barrick will address all of the environmental issues and concerns applicable to this closure. It is Barrick's intention to maintain proactive involvement of all regulatory agencies and stakeholders in this effort.

Over 30 individual permits, approvals, authorizations, notifications, etc. were obtained during the design, construction, and operational phases of the Mercur Mine. Additional permits and authorizations will be required during the closure phase. Appendix A contains an Environmental

Regulatory Assessment Table describing the principal regulatory agencies involved in the current operational and closure phases of the Mercur Mine and a brief synopsis of their specific involvement.

5.1 Federal Agencies

The U.S. Environmental Protection Agency **(EPA)** retains permit review, approval, and enforcement authority, in addition to delegated State authority, for State - administered surface water, air quality, and hazardous waste programs. These include the Mercur UPDES, air operating, and RCRA hazardous waste generator permits. Barrick will be required to complete an application for renewal of the UPDES permit in August 1998. The **RCRA** hazardous waste generator permit will be applicable until the last shipment of hazardous wastes generated during the decommissioning of the facility.

The U.S. Department of Interior - Bureau of Land Management (**BLM**) has jurisdiction over Federal properties within the Mercur disturbance boundary (+300 acres). A major revision to the BLM Plan of Operations was submitted in June 1996. These revisions update and refine the status of the Mercur operations prior to entering the closure phase of the Mercur Mine.

Barrick has initiated with the BLM an exchange of Federal land administered within the disturbance area and lands owned by Barrick. Studies and appraisals are underway and, should all aspects of this effort be successful, the land exchange could be consummated by April 1997.

Cooperation with the BLM will continue even in the event the land exchange is approved, as this agency will be a major adjacent landowner. Mutual evaluation of designed recreational facilities such as off-road vehicle tracks and camping locations will be necessary as this area was historically utilized for such activities and most probably will revert to such activities again. This aspect of post-mining use will also require the assistance of recreational planners from Tooele County, Utah County, and the State of Utah. In particular, the adjacent Sunshine Offroad Vehicle Trail System Area being developed by the BLM provides an opportunity for such a coordinated effort.

Barrick also has the Mercur water pipeline Rights-of-Way permit with the BLM which will need to be vacated or extended. An additional buried pipeline Rights-of-Way permit exists with the BLM for the Ophir Creek-to-Well 8P corridor in Rush Valley.

The U.S. Department of Labor - Mine Safety and Health Administration **(MSHA)** will be consulted for both closure and post-closure safety considerations for worker safety matters and recreation access.

The U.S. Department of Interior - Fish and Wildlife Service **(USF&WS)** will be consulted for potential threatened and endangered species determinations through their Memorandum of Agreement with the Utah Division of Oil, Gas, and Mining. No such species are known to exist within the Mercur disturbance boundary.

The U.S. Army - Corps of Engineers will be apprised of closure developments as they impact previously delineated waters-of-the-US. Recent revisions to the nationwide permit program will be assessed for applicability to the closure phase activities.

5.2 State Agencies

The principal agency for reclamation and post-closure designation approval will be the Utah Department of Natural Resources-Division of Oil, Gas, and Mining **(UDOGM)**. UDOGM administers the Mercur Mining and Reclamation Plan Permit and holds the Reclamation Surety Contract. UDOGM will focus on the tailing impoundment, the three valley fill leach facilities, any remaining open pit highwalls, and all angle-of-repose waste rock disposal area slopes. The UDOGM goal for these areas will be long-term stability from an erosion control and vegetative success standpoint. A revised Notice of Intent to Revise a Large Mining Operation was filed with UDOGM in June 1996. UDOGM coordinates approvals for these specific items principally with the Utah Department of Environmental Quality - Division of Water Quality **(UDWQ)**, as well as with the BLM.

The UDWQ administers the UPDES surface water discharge permit and two groundwater quality discharge permits at Mercur. The UPDES permit covers all process and storm water solution discharges. The groundwater quality discharge permits are held for the tailing impoundment area and Valley Fill Leach Area #3 (VF3).

The Utah Department of Natural Resources - State Engineer's Office administers two programs for Mercur. These include the water appropriations documents from the Division of Water Rights **(UDWR)** and the dam safety approvals from the Division of Dam Safety **(UDDS)**.

The Utah Department of Natural Resources - Division of Dam Safety **(UDDS)** must approve the ultimate configuration of the tailing impoundment for long-term stability considerations. Such considerations include breaches, spillways, or other physical modifications to the existing operation-phase configuration. The UDDS has indicated that a designed spillway will satisfy the applicable requirements for breaching if the levee buttress is abandoned at a lower elevation.

The Utah Department of Environmental Quality - Division of Emergency Response and Remediation **(UDERR)** will be partially involved in the decommissioning of the fuel storage facility at Mercur.

UDERR has extended the date for removal of all underground fuel storage tanks until December 1998. Removal plans for these tanks will require pre-approval and completion by a State-certified contractor.

The Utah Department of Environmental Quality - Division of Solid and Hazardous Waste **(UDS&HW)** will be responsible for the final closure activities involving hazardous waste shipments and disposal, final configuration of the industrial solid waste landfill, and the disposal of all facility decommissioning debris. UDS&HW will also be consulted prior to any scientific laboratory chemical donations to the Tooele school system.

The Utah Department of Natural Resources - Division of Wildlife Resources **(UDWR)** will be required to provide biological and ecological input to the final reclamation design as current post-

mining land use is designated primarily to support wildlife habitat. Public recreation and livestock grazing considerations must also be addressed as potential competing post-mining land uses.

The Utah Department of Environmental Quality - Division of Radiation Control (UDRC) will be requested to advise Mercur personnel on the removal and disposal/reuse of the existing radiation devices.

5.3 County Agencies

Two counties will be involved in the closure plans for Mercur. These counties are **Tooele** and **Utah**.

Tooele County currently holds a conditional use permit for the mining operation and associated disturbance as well as road use agreements for the main Mercur access road. The approval of the conditional use permit required a zoning change to accommodate industrial activities. This industrial designation will probably require modification upon final closure to accommodate alternative post-closure utilization.
While all reclamation and environmental closure designs are subject to State approval with Tooele County input, this county input is critical as zoning enforcement by Tooele County will be necessary to ensure the long-term establishment of post-mining land uses. The ultimate road configurations to re-establish historic access to Manning and Ophir Canyons may require joint Tooele County and State/Federal approvals. The final disposition of the visitor's center will also be subject to Tooele County review.

Utah County has issued approval letters for minimal disturbances on the surface hydrologic divide between Manning Canyon and Mercur/Meadow Canyons. All final land configuration plans submitted to UDOGM, BLM. or Tooele County will also be submitted to Utah County to ascertain their specific concerns, particularly as they impact the historic Manning Canyon to Mercur Canyon access road.

6.0 Land Disposition

The Mercur mining district has been active since the 1870's. Over this span of time, very complicated land ownership patterns have evolved. Barrick will make every attempt to simplify the post-mining land ownership scenario.

6.1 Fee Land

Barrick owns many acres of land in the Mercur District. Ownership varies from full surface and minerals to partial surface. These lands comprise discontinuous parcels. Not all lands have been impacted by mining. At completion of mining and reclamation, Barrick may dispose its owned lands through sale, donation or grant.

6.2 Fee Land Leases

Barrick holds eight leases of fee lands owned by private individuals and corporations. Lease agreements will be negotiated with individual inholders to address closure.

6.3 State Leases

Barrick holds one State Mineral Lease, covering 175 acres.

6.4 Unpatented Mining Claims

Barrick owned 308 unpatented mining claims and 9 unpatented millsite claims through the 1994/1995 assessment year. Subsequently, 170 claims have been filed in the name of Barrick Resources. Mining and millsite claims may be sold or abandoned at the completion of exploration and mining activity. Termination of permits issued for activity on the claims is independent of final claim status.

6.5 Rights-of-Way, Easements

6.5.1 Pipeline Rights-of-Way

Barrick holds three pipeline rights-of-way agreements. The Bureau of Land Management, a private party, and Tooele County are involved in different aspects of process water delivery from Rush Valley to the minesite. The BLM rights-of-way can be terminated by Barrick request. Termination requirements are specific and require removal and reclamation of any surface structures or improvements. Barrick may also terminate the private and county agreements at the completion of mining operations.

6.5.2 Road Rights-of-Way

Barrick and Tooele County have an agreement whereby Barrick will convey to Tooele County at the cessation of mining, the right-of-way for the roads vacated by the County at the onset of mining. The roads must meet County construction standards.

7.0 Post - Mining Monitoring

7.1 Environmental

Environmental monitoring during the post-closure will consist primarily with compliance with groundwater protection standards, NPDES and stormwater discharge standards, performance standards from sewage and process water passive treatment systems, and potential monitoring of soils undergoing remediation. Additional monitoring may consist of wildlife baseline updates and continuation of regional surface water quality databases.

Environmental monitoring is projected to continue through the year 2002. This would necessarily include at least one additional permitting process for the UPDES and groundwater quality permits.

Determinations will be made at that conclusion of these renewed permits for any continued monitoring.

7.2 Reclamation

Revegetation monitoring must continue for at least the minimum three-year vegetation reestablishment period. Erosion control mechanisms, stormwater conveyances, cover designs for the valley fill leach areas and tailing impoundment, and passive treatment design technologies must also be monitored for at least this period. In reality, monitoring of the biological and physical aspects of the Mercur closure plan will likely continue through the year 2005 or six years after the cessation of gold production.

Additionally, safety and security provisions will be monitored for effectiveness while environmental and reclamation monitoring occurs.

CONTACT	AGENCY	ADDRESS	PHONE / FAX	FOCUS	NOTES
Doug Ahlstrom	**Tooele County Attorney**	**47 South Main Tooele, Utah 84074**	**P8018829150 F8018827317**	**Land Use Legal**	
Teryl Hunsaker Chair	**Tooele County Commissioner**	**47 South Main Tooele, Utah 84074**	**P8018829150 F8018827317**	**Land Use Recreation**	
Gary Griffith	**Tooele County Commissioner**	**47 South Main Tooele, Utah 84074**	**P8018829150 F8018827319**	**Land Use Recreation**	
Louis McArthur	**Tooele County Commissioner**	**47 South Main Tooele, Utah 84074**	**P8018829150 F8018827319**	**Land Use Recreation**	
Ray Johnson	**Tooele County Engineer**	**47 South Main Tooele, Utah 84074**	**P8018829160 F8018827319**	**Access Land Use**	
Barry Formo	**Tooele County Engineers Office**	**47 South Main Tooele, Utah 84074**	**P8018829160 F8018827319**	**Access Land Use**	
Vicki Rolfe	**Tooele County Health Department**	**47 South Main Tooele, Utah 84074**	**P8018432340 F8018432304**	**Landfill Potable Water Groundwater**	
Michael Schwinn Chief	**U.S. Department of Defense - Corps of Engineers Utah Regulatory Office**	**1403 South 600 West, Suite A Bountiful, UT 84010**	**P8012958380 F8012958842**	**Waters of United States**	
Gloria Flora Acting Manager	**U.S. Department of Interior – Bureau of Land Management**	**Salt Lake District Office, 2370 South 2300 West Salt Lake City, UT 84119**	**P8019774300 F8019774397**	**Reclamation Facility Closure**	
William G. Lamb Director	**U.S. Department of Interior – Bureau of Land Management**	**Utah State Office 324 South State, Suite 301 Salt Lake City, UT 84111-2303**	**P801- F801-**	**Reclamation Facility Closure**	
Margaret Wyatt Manager	**U.S. Department of Interior – Bureau of Land Management**	**Salt Lake District Office, Pony Express Resource Area, 2370 South 2300 West Salt Lake City, UT 84119**	**P8019774300 F801**	**Reclamation Facility Closure**	

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David Gardner	**Utah County Commissioner**	**100 East Center Street Suite 2300 Provo, UT 84606**	**P8013708135 F801**	**Land Use Recreation**	
Gary Herbert	**Utah County Commissioner**	**100 East Center Street Suite 2300 Provo, UT 84606**	**P8013708135 F801**	**Land Use Recreation**	
Clyde Naylor	**Utah County Engineer**	**2855 South State Street Provo, UT 84606**	**P8013708600 F8013708612**	**Access**	
Joe Miner	**Utah County Health Department**	**589 South State Street Provo, UT 84606**	**P8013708700 F8013708709**	**Groundwater**	
Dianne Nielson Executive Director	**Utah Department of Environmental Quality**	**168 North 1950 West, P.O. Box 1144810 Salt Lake City, UT 84114-4810**	**P8015364404 F8015360061**	**Facility Closure**	**EPA Liaison**
Ursula Trueman Director	**Utah Department of Environmental Quality - Division of Air Quality**	**150 North 1950 West, P.O. Box 144820 Salt Lake City, UT 84114-4820**	**P8015364000 F8015364099**	**Air Emissions**	**EPA Liaison**
Kevin W. Brown Director	**Utah Department of Environmental Quality - Division of Drinking Water**	**288 North 1460 West, P.O. Box 144830 Salt Lake City, UT 84114-4830**	**P8015386159 F8015386016**	**Water Supply Well Closure**	
Ken Bousfield Compliance Manager	**Utah Department of Environmental Quality - Division of Drinking Water**	**288 North 1460 West, P.O. Box 144830 Salt Lake City, UT 84114-4830**	**P8015386159 F8015386016**	**Water Supply Well Closure**	

CONTACT	AGENCY	ADDRESS	PHONE / FAX	FOCUS	NOTES
Kent P. Gray Director	**Utah Department of Environmental Quality - Division of Environmental Response & Remediation**	**168 North 1950 West, First Floor Salt Lake City, UT 84116**	**P8015364100 F8013598853**	**Soil Remediation Underground Storage Tanks**	**EPA Liaison**
Helen Sadik - MacDonald	**Utah Department of Environmental Quality - Division of Environmental Response & Remediation**	**168 North 1950 West, First Floor Salt Lake City, UT 84116**	**P8015364235 F8013598853**	**Soil Remediation Underground Storage Tanks**	
Gary Harris	**Utah Department of Environmental Quality - Division of Environmental Response & Remediation**	**168 North 1950 West, First Floor Salt Lake City, UT 84116**	**P8015364100 F8013598853**	**Soil Remediation Underground Storage Tanks**	
William Sinclair Director	**Utah Department of Environmental Quality - Division of Radiation Control**	**168 North 1950 West, P.O. Box 144850 Salt Lake City, UT 84114-4850**	**P8015364250 F8015368128**	**Radioactive Devices**	
Dennis Downs Director	**Utah Department of Environmental Quality - Division of Solid & Hazardous Waste**	**288 North 1460 West, P.O. Box 144880 Salt Lake City, UT 84114-4880**	**P8015386170 F8015386715**	**Solid Waste Hazardous Waste**	**EPA Liaison**
Doug Taylor	**Utah Department of Environmental Quality - Division of Solid & Hazardous Waste**	**288 North 1460 West, P.O. Box 144880 Salt Lake City, UT 84114-4880**	**P8015386857 F8015386715**	**Solid Waste Hazardous Waste**	
Rob Powers	**Utah Department of Environmental Quality - Division of Solid & Hazardous Waste**	**288 North 1460 West, P.O. Box 144880 Salt Lake City, UT 84114-4880**	**P8015386857 F8015386715**	**Solid Waste Hazardous Waste**	

CONTACT	AGENCY	ADDRESS	PHONE / FAX	FOCUS	NOTES
Don Oslter Director	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	**EPA Liaison**
Larry Mize	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
Fred Pehrson Engineer	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
Dennis Frederick Engineer	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
John Whitehead	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
Donald A. Hilden	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
Steve McNeil	**Utah Department of Environmental Quality - Division of Water Quality**	**288 North 1460 West, P.O. Box 144870 Salt Lake City, UT 84114-4870**	**P8015386146 F8015386016**	**Surface Water Groundwater Closure**	
Ted Stewart Executive Director	**Utah Department of Natural Resources**	**1636 West North Temple, #316 Salt Lake City, UT 84116-3193**	**P8015387200 F801**	**Closure**	
Richard B. Hall Assistant State Engineer	**Utah Department of Natural Resources - Division of Dam Safety**	**1636 West North Temple, Suite 220 Salt Lake City, UT 84116-3156**	**P8015387240 F8015387467**	**Dam Safety**	

CONTACT	AGENCY	ADDRESS	PHONE / FAX	FOCUS	NOTES
James W. Carter Division Director	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385327 F801**	**Facility Closure Reclamation**	
Mary Ann Wright Associate Director - Mining	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385306 F801**	**Reclamation Abandoned Mined Lands**	
Lowell Braxton Deputy Division Director	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385327 F801**	**Reclamation Facility Closure**	
Wayne Hedberg Permit Supervisor	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385327 F801**	**Reclamation Facility Closure**	
Anthony Gallegos	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385327 F801**	**Reclamation Facility Closure**	
Tom Munson Reclamation Hydrologist	**Utah Department of Natural Resources - Division of Oil, Gas, and Mining**	**1594 West North Temple, Suite 1210, Box 145801 Salt Lake City, UT 84114-5801**	**P8015385327 F801**	**Reclamation Facility Closure**	
Robert L. Morgan State Engineer	**Utah Department of Natural Resources - Division of Water Rights**	**1636 West North Temple, Suite 220 Salt Lake City, UT 84116-3156**	**P8015387240 F8015387467**	**Water Rights Well Closure**	
John Mann Engineer	**Utah Department of Natural Resources - Division of Water Rights**	**1636 West North Temple, Suite 220 Salt Lake City, UT 84116-3156**	**P8015387397 F8015387467**	**Water Rights Well Closure**	

CONTACT	AGENCY	ADDRESS	PHONE / FAX	FOCUS	NOTES
BobValentine Director	**Utah Department of Natural Resources - Division of Wildlife Resources**	**1596 West North Temple Salt Lake City, Utah 84116-3195**	**P8015384700 F801**	**Wildlife Impact**	**U.S. DOI Liaison**
Thomas Becker	**Utah Department of Natural Resources - Division of Wildlife Resources**	**Central Region 1115 North Main Street Springville, UT 84663-1055**	**P8014895678 F801**	**Wildlife Impact**	
David Terry Director	**Utah Department of School and Institutional Trust Lands Administration**	**675 East 500 South, Suite 500 Salt Lake City, UT 84102**	**P8015385100 F8013550922**	**Recreation Adjacent Landowner**	

Engineering Evaluations

The following engineering evaluations have been conducted by a variety of consulting firms to assist Barrick in developing a closure plan for the Mercur Mine.

Mine Site Drainage and Reclamation

Reference 96-02
Tailing Impoundment run-off Diversion Ditch and Spillway Design, JBR Environmental, May 1996. This report provides designs for the planned impoundment spillway and run-off diversion ditch system proposed to prevent ponding and reduce the potential for moisture infiltration and tailing cover erosion.

Reference 96-05
Regrading, Surface Hydrology and Storm Water Routing-Conceptual Plan, JBR Environmental, May 1996. This document summarizes Barrick's post-mining regrading plans; evaluates the surface hydrology; and develops storm water routing plans.

Mill Facility Reclamation

Reference 95-06
Budgetary Reclamation Cost to Reclaim the Barrick Mercur Gold Mine Process Support Facilities, Scotia Corporation, May 1995.

Reference 95-08
Salvage Appraisal Consultants Report for Mining, Milling, Processing, and Plant Support Equipment, Including All Facilities and Structures, American Technology, Inc., November 1995. This report provides salvage and resale estimates for all remaining equipment and structures.

Valley Fill Leach Reclamation

Reference 95-05
Valley Fill Leach Area #2 Proposed Closure Plan, Barrick, et al., April 1995. This approved plan details closure requirements and procedures for Valley Fill Leach #2.

Reference 96-10
Valley Fill Leach Area #3 Interim Closure Plan, Barrick, et al. August 1996. This approved plan details closure requirements and procedures for Valley Fill Leach #3.

Tailing Impoundment Dewatering

Reference 95-02
Tailing Dewatering Estimate Using Vegetation: JBR Environmental, January 1995. This study investigated the potential effect of vegetation on the tailing surface in dewatering the tailing impoundment surface. The HELP Model was used in this evaluation.

Reference 95-03
Comparison of Evaporation Methods for the Mercur Tailing Impoundment, JBR Environmental, February 1995. This study was commissioned to evaluate vegetative and evaporative techniques for use in dewatering the tailing surface.

Reference 96-01
Pre-Closure Philosophy for Tailing Impoundment at Barrick Mercur Mine, Steffen Robertson and Kirsten, Inc. (SRK), January 1996. SRK evaluated the water storage potential for both the tailing impoundment and the proposed East Bay Storage Cell. Their evaluation concurred with Mercur's proposed plans.

Reference 96-04
Impoundment Operating and Reclamation Earthwork Schedules 1997-2002, DG Consultants, April 1996. This report presents a tailing impoundment operating schedule intended to maximize tailing impoundment dewatering potential while encouraging beach development and tailing surface contouring. These schedules also address reclamation of the tailing impoundment, mine waste rock disposal areas, and valley fill leach facilities.

Tailing Impoundment Covering

Reference 95-01
Reservation Canyon Tailing Impoundment Reclamation Capping Study. Knight-Piésold. January 1995. This initial tailing impoundment cover study identifies and evaluates cover systems that might be considered for use at Mercur. The HELP Model was used to estimate seepage through the covers. Conceptual cost estimates were developed for 12 cover alternatives. Non-conventional barrier layers were discussed.

Reference 95-04
Tailing Cap Percolation Study, JBR Environmental, April 1995. This is a follow-up to the Knight-Piésold capping study (Reference 95-01). It utilized the HELP Model to further evaluate soils capping alternatives. Twenty-six (26) topsoil, fill, clay, gravel and geocomposite caps of varying thickness and combinations were evaluated.

Reference 96-03
Infiltration Analysis-Reservation Canyon Tailing Impoundment, TriTechnics Corporation, April 1996. This
report presents the HELP Model results for the final tailing impoundment cap design and evaluates how infiltration will affect existing moisture content in the tailing.

Tailing Impoundment Stability and Hydrology

Reference 96-08
Tailing Impoundment Surface Subsidence and Structure Stability Study, Physical Resource Engineering, June 1996. Report is being written at this time.

Water Treatment Options

Reference 95-07
Mercur Mine Water Treatment Alternatives, Steffen Robertson and Kirsten, Inc. (SRK), September 1995. This study was intended to identify, describe and evaluate alternatives for treating tailing impoundment surface and seepage water.

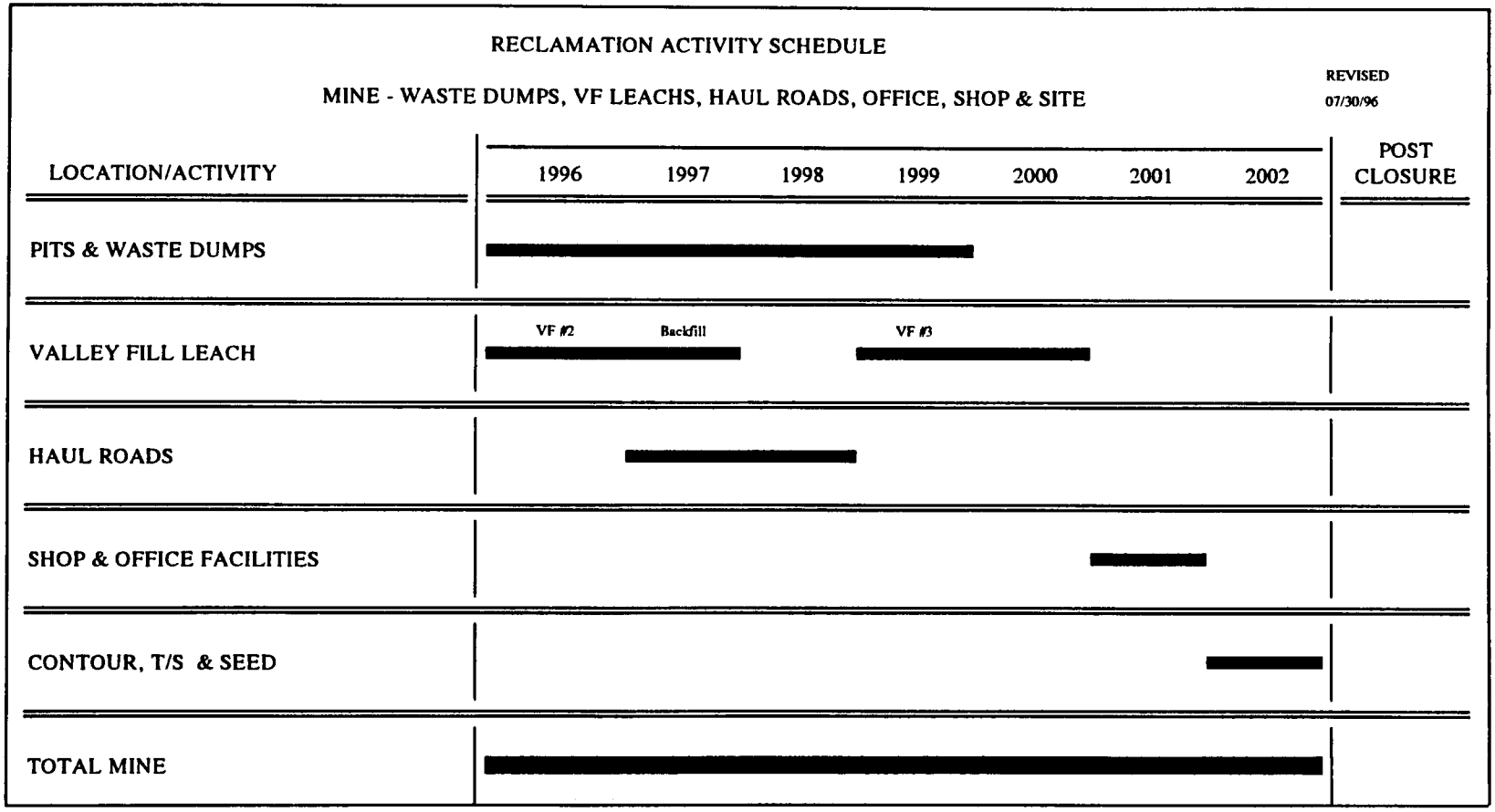
Reference 96-06
Passive Treatment and Disposal Options, Reservation Canyon Tailing Impoundment Waters and Seepage Collection Systems, TriTechnics Corp., May 1996. This is a follow-up study on water treatment alternatives available for dewatering the tailing impoundment, with particular emphasis on passive treatment technology. The report contains a comprehensive review of the passive treatment chemistry.

Reference 96-09
Laboratory Heap Leach Rinse and Passive Treatment Bench Tests, Compliance Technology, June Laboratory studies were conducted on Mercur process solutions to investigate various techniques for solution clean up or neutralization

RECLAMATION ACTIVITY SCHEDULE

MINE - WASTE DUMPS, VF LEACHS, HAUL ROADS, OFFICE, SHOP & SITE

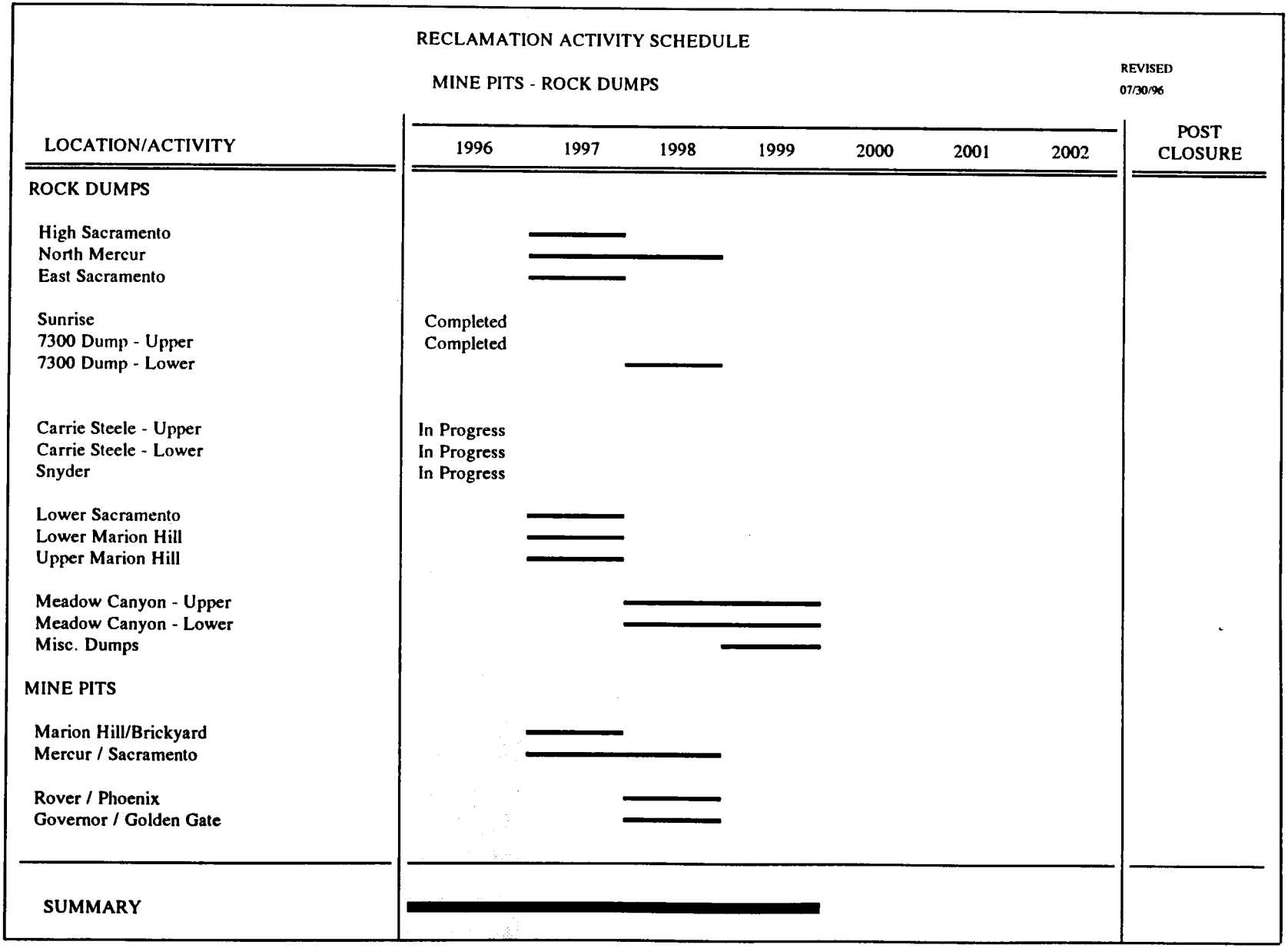
REVISED
07/30/96



RECLAMATION ACTIVITY SCHEDULE

MINE PITS - ROCK DUMPS

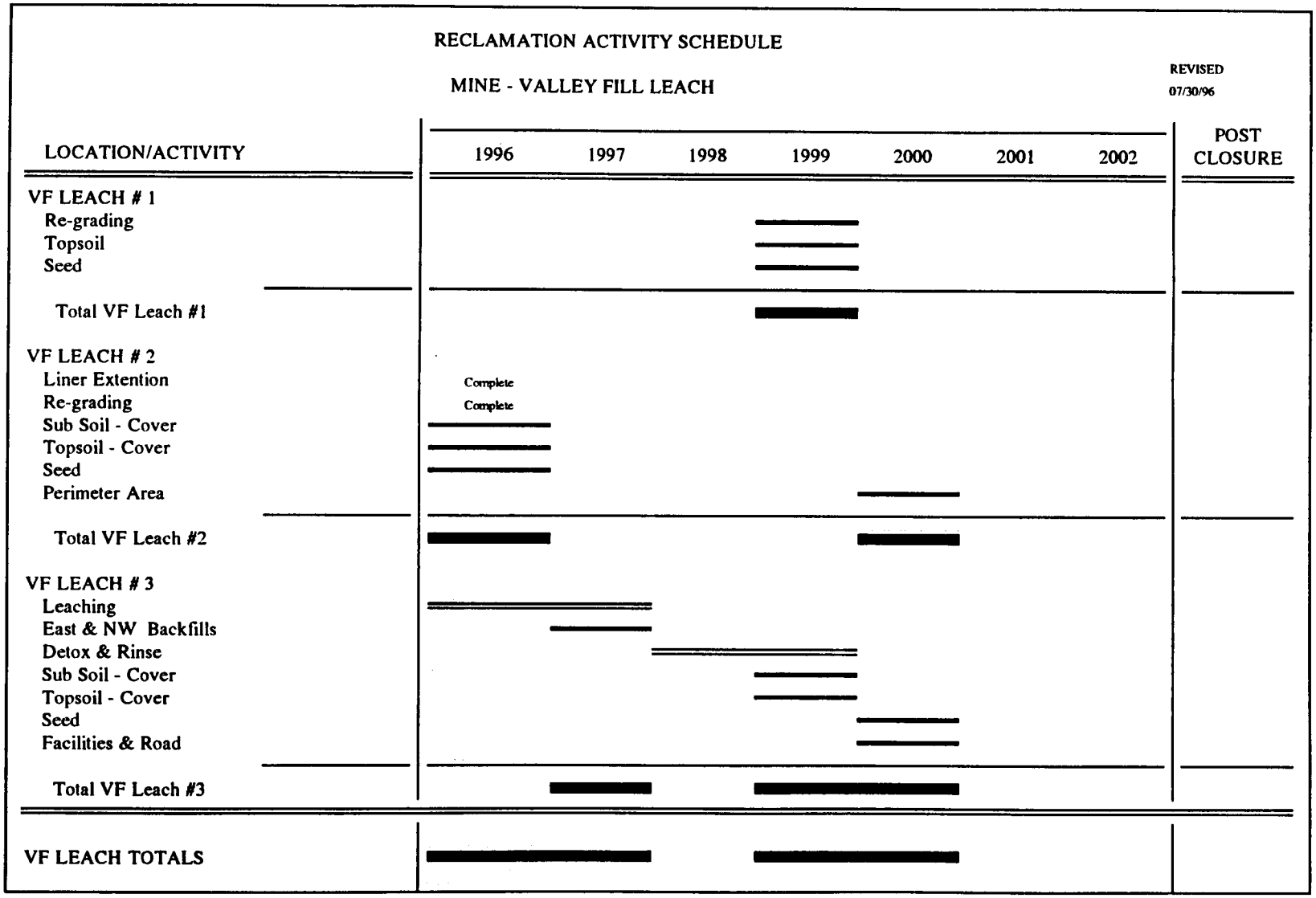
REVISED
07/30/96



RECLAMATION ACTIVITY SCHEDULE

MINE - VALLEY FILL LEACH

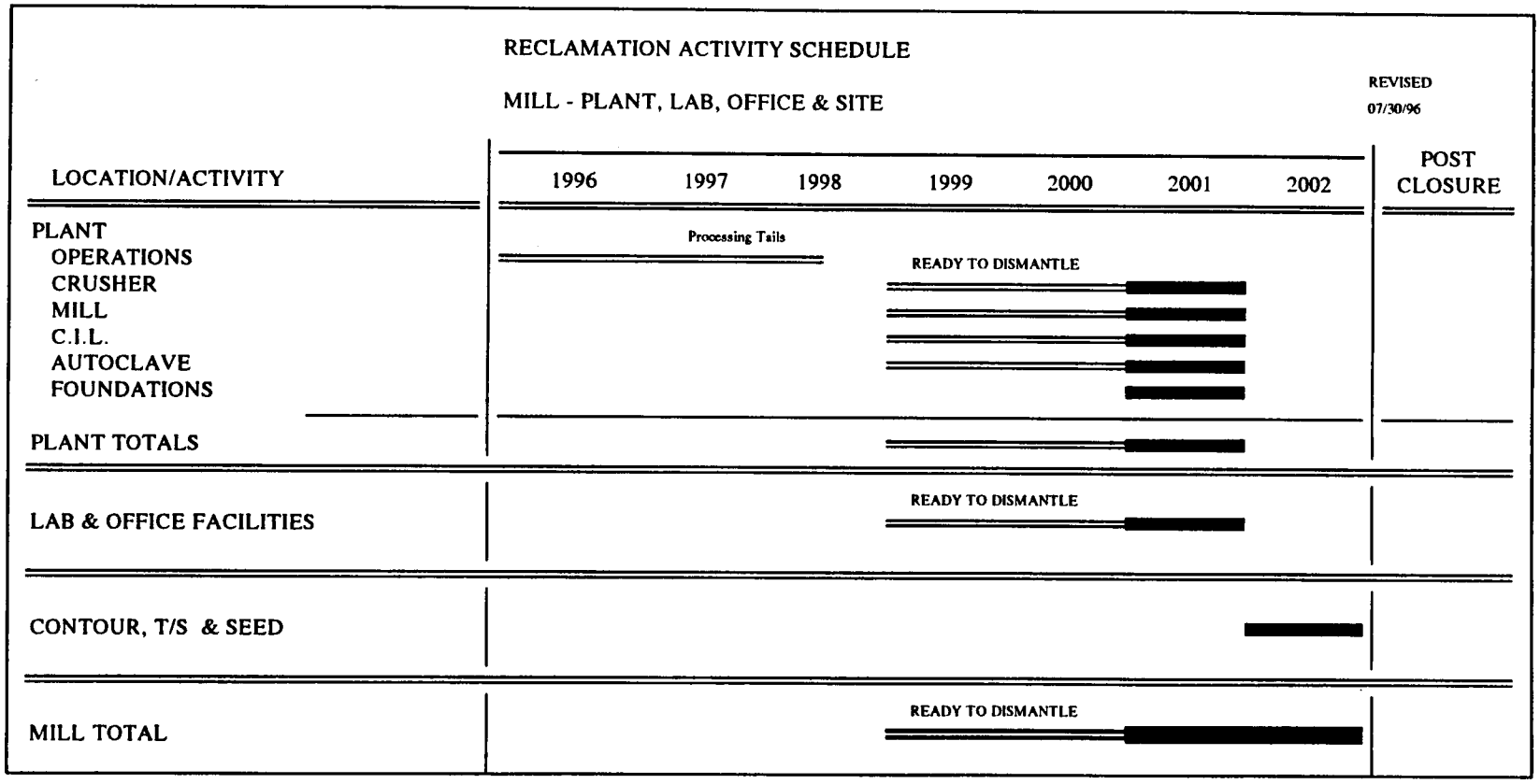
REVISED
07/30/96



RECLAMATION ACTIVITY SCHEDULE

MILL - PLANT, LAB, OFFICE & SITE

REVISED
07/30/96

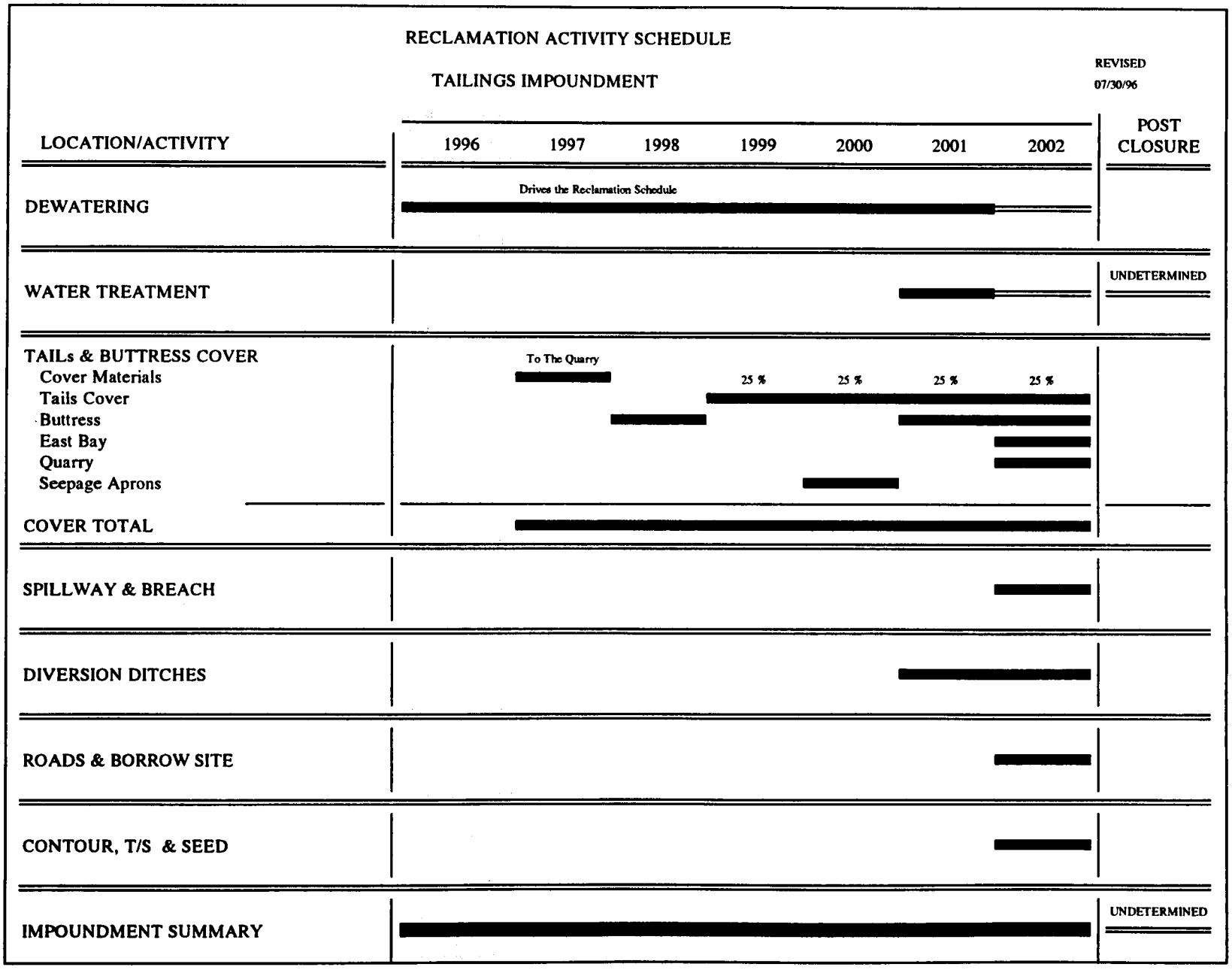


Appendix C-3
Tailing Impoundment Reclamation Schedule

RECLAMATION ACTIVITY SCHEDULE

TAILINGS IMPOUNDMENT

REVISED
07/30/96

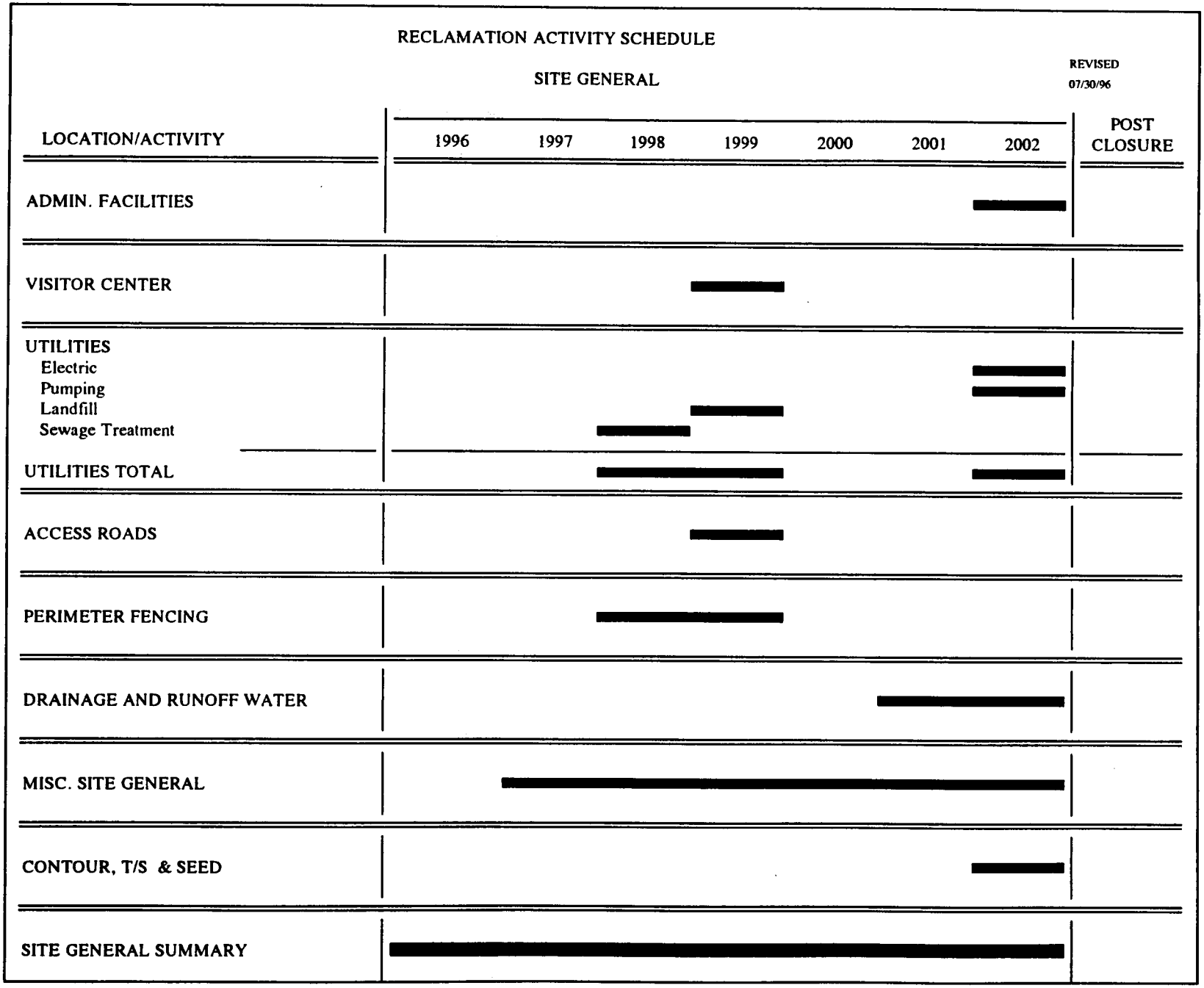


Appendix C-4
Site General Facility Reclamation Schedule

RECLAMATION ACTIVITY SCHEDULE

SITE GENERAL

REVISED
07/30/96

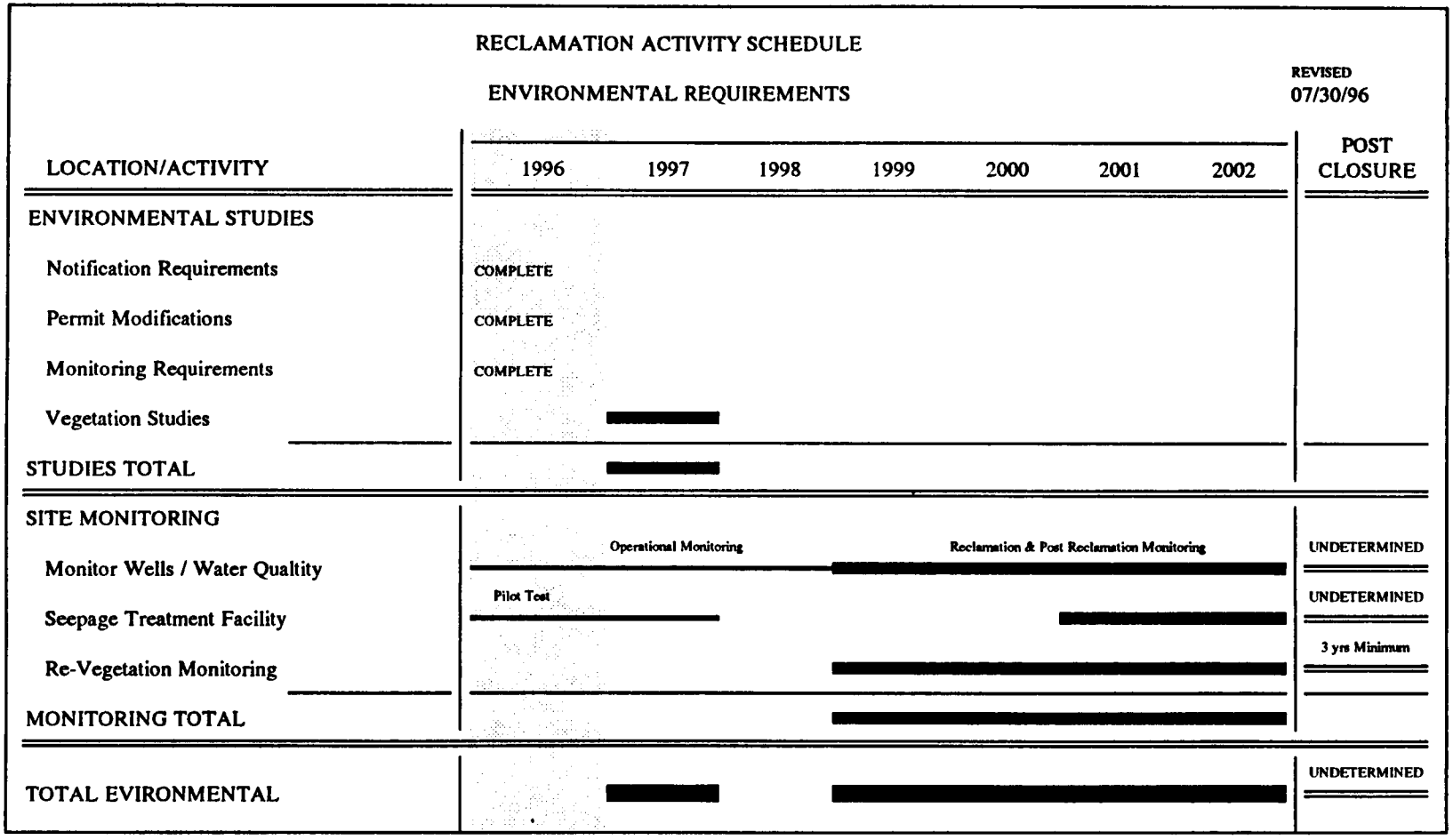


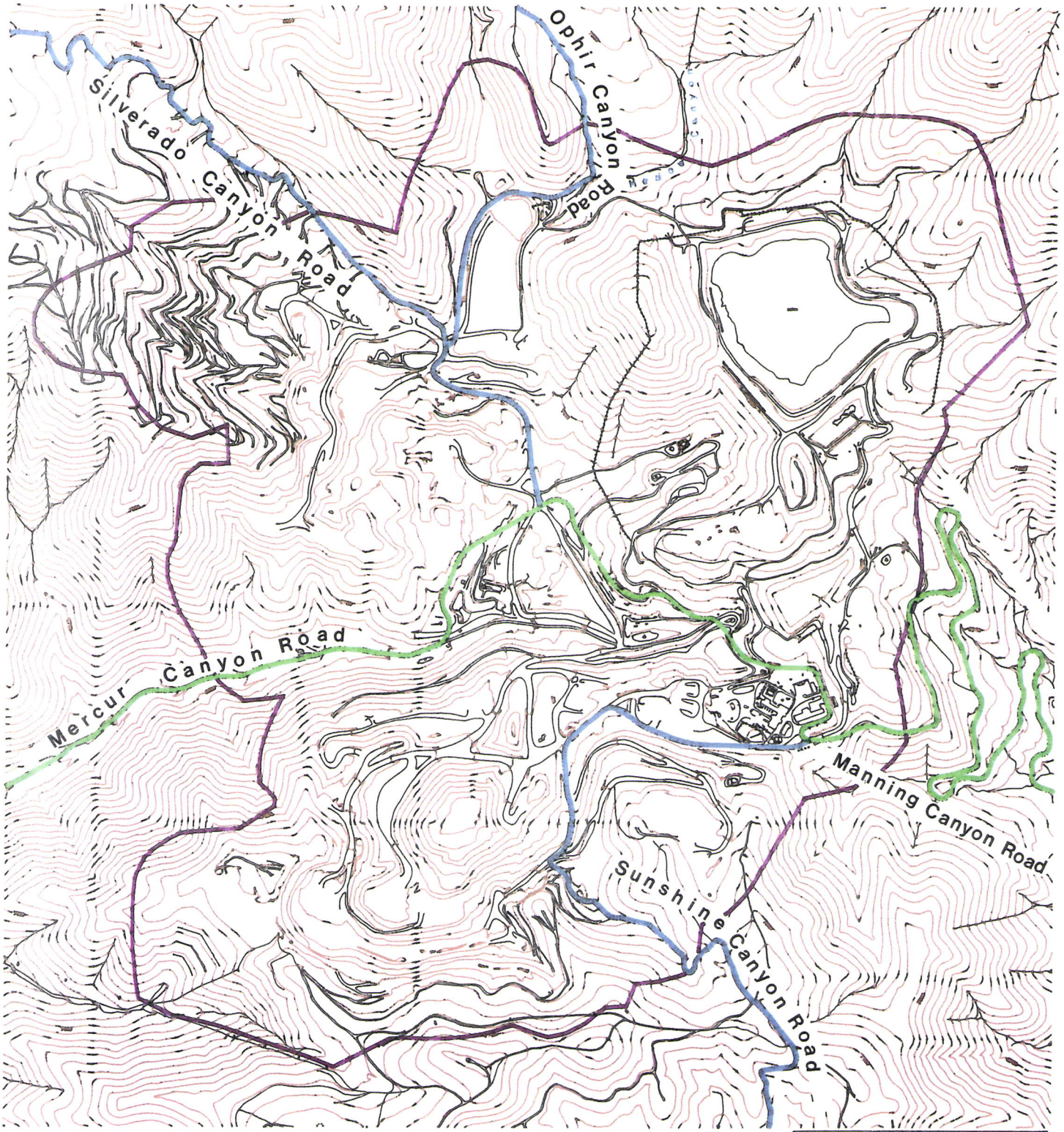
Appendix C-5
Reclamation Activity Schedule - Environmental Requirements

RECLAMATION ACTIVITY SCHEDULE

ENVIRONMENTAL REQUIREMENTS

REVISED
07/30/96





Re-established Public Roadways

Figure 1

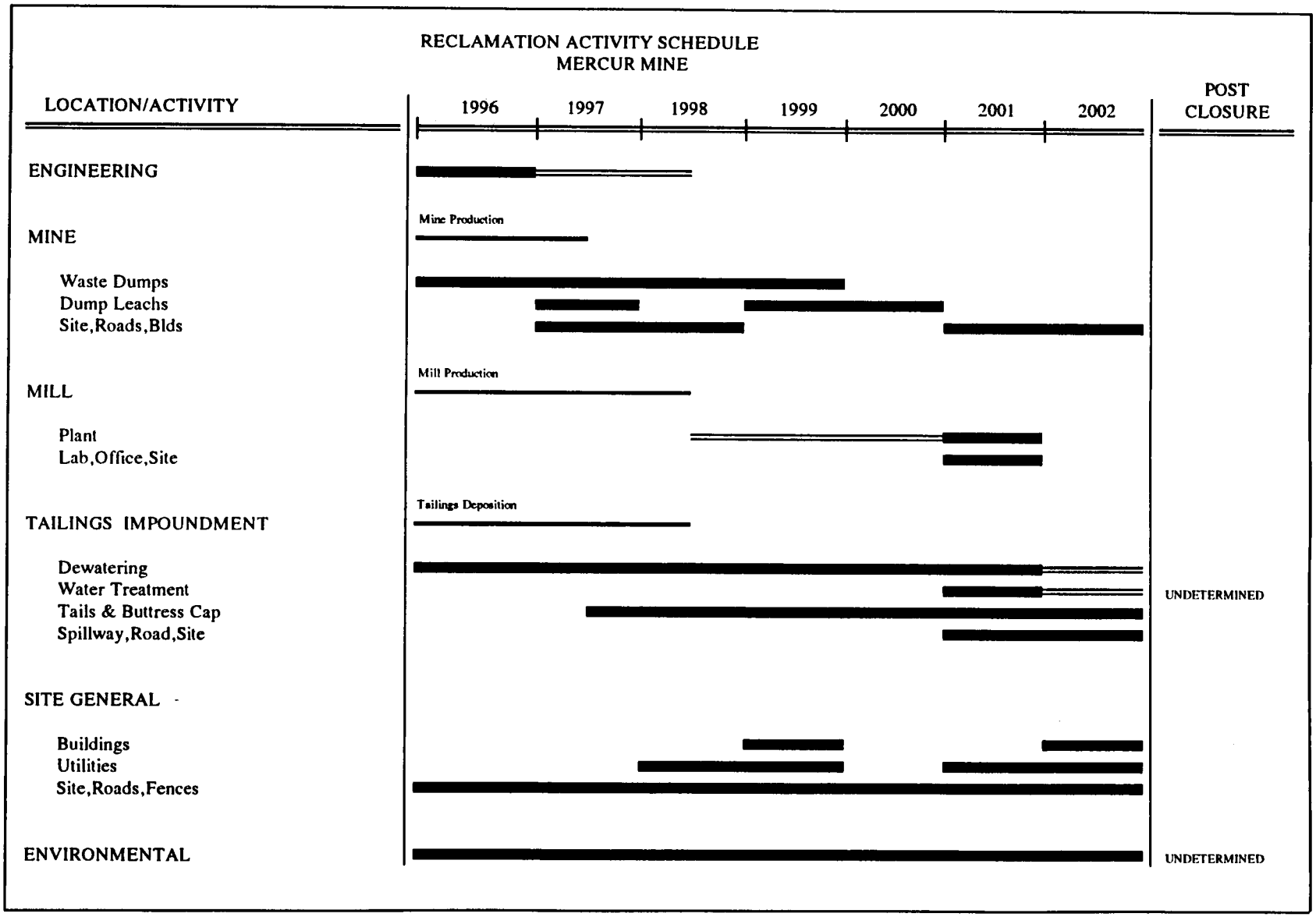

RECLAMATION ACTIVITY SCHEDULE
MERCUR MINE
LOCATION/ACTIVITY
1996
1997
1998
1999
2000
2001
2002
POST CLOSURE
ENGINEERING
MINE
Mine Production
Waste Dumps
Dump Leachs
Site,Roads,Blds
MILL
Mill Production
Plant
Lab,Office,Site
TAILINGS IMPOUNDMENT
Tailings Deposition
Dewatering
Water Treatment
Tails & Buttress Cap
Spillway,Road,Site
UNDETERMINED
SITE GENERAL
Buildings
Utilities
Site,Roads,Fences
ENVIRONMENTAL
UNDETERMINED

TABLE 1